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**A REVISION OF THE GENUS NEOCREPIDODERA HEIKERTINGER
IN JAPAN (CHRYSMELIDAE: ALTICINAE)**

By HARUO TAKIZAWA

Abstract

TAKIZAWA, H. 2002. A revision of the genus *Neocrepidodera* Heikertinger in Japan (Chrysomelidae: Alticinae). *Ins. matsum. n. s.* 59: 39–53, 27 figs.

Thirteen species of the genus *Neocrepidodera* Heikertinger (sensu Konstantinov, 1995) in Japan are revised. *N. ohkawai* and *N. satoi* are described as new species from Honsyu, Japan. *N. acuminata* (Jacoby) is resurrected from synonymy with *N. laevicollis* (Jacoby) as a good species. Further, *N. sublaevis* (Motschulsky) is recorded from Japan for the first time. All the species are keyed and illustrated of the habitus and male aedeagus.

Key words: Chrysomelidae; *Neocrepidodera*; new species; Japan.

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INTRODUCTION

The sense of the alticine genus *Neocrepidodera* Heikertinger, 1911 was recently enlarged to include *Asiolestia* Jacobson, 1925, formerly accepted as a distinct genus (Konstantinov & Vandenberg, 1996). *Neocrepidodera* in this sense has been represented by eight species in Japan. In the course of present study on the genus, five additional species including two new ones were found in Japan. All these species are keyed and diagnosed in this paper.

The holotypes of *N. satoi* and *N. ohkawai*, n. spp. will be deposited in the collection of the Laboratory of Systematic Entomology, Hokkaido University (SEHU), Sapporo. The depository of used specimens are as follows: YK, Y. Komiya's private collection in Tokyo; SK, S. Kimoto's private collection in Hukuoka; CNC, Canadian National Collection in Ottawa; AESR, Institute of Agro-Environmental Science Research, Tukuba and TPM, Tochigi Prefectural Museum, Utunomiya.

Before going further I wish to express my hearty thanks to the following gentlemen to whom I owe much of present material: Mr. A. Abe in Aomori, Dr. M. Inaizumi, Mrs. K. Sato and H. Ohkawa in Totigi, Dr. H. Ohmomo in Ibaraki, Dr. Y. Komiya in Gunma, Dr. K. Kurosa and Mr. K. Sakai in Tokyo, Mrs. M. Horikawa and S. Tsuyuki in Kanagawa, Mr. Y. Koshiyama in Okayama and Dr. L. LeSage in Ottawa. And to Dr. M. Ohara of the Laboratory of Systematic Entomology, Hokkaido University, Sapporo, Dr. T. Nakamura of Tochigi Prefectural Museum, Utunomiya, Dr. K. Ueda of Kitakyushu Museum and Institute of Natural History, Kitakyusyu, Dr. T. Matsumura, formerly of the National Institute of Agro-Environmental Sciences, Tukuba and Dr. S. Shute of the British Museum of Natural History, London for the loan of materials, and to Dr. S. Kimoto in Hukuoka for his continuous guidance and helps in literature and material.

GENUS *NEOCREPIDODERA* HEIKERTINGER, 1911

Neocrepidodera Heikertinger, 1911, Arch. Naturg. 77 (1) suppl.: 34–38 (type species: *Ochrosis sibirica* Pic, 1909: Siberia, by monotypy) – Heikertinger & Csiki, 1939, in Junk (ed), Coleopt. Cat. pars 166, Chrysomelidae, Halticinae: 180 – Kimoto, 1994, Leaf-beetles (Chrysomelidae) of Japan, Vol. Adult: 169, 247 – Konstantinov & Vandenberg, 1996, Handbook of Palearctic flea beetles: 286–289.

Asiolestia Jacobson, 1925, Ann. Mus. Zool. Acad. Sci. Leningrad 26 (5–6): 274 (type species: *Asiolestia kozhanthikovi* Jacobson, 1925: Siberia, by monotypy) – Kimoto, 1994, Leaf-beetles (Chrysomelidae) of Japan, Vol. Adult: 168, 247 – Doberl, 1994, Alticinae. In Die Kaefer Mitteleuropas, Bd. 14: 112 – Konstantinov & Vandenberg, 1996, Handbook of Palearctic flea beetles: 286–289.

Orestinoides Hatch, 1935, Ent. News 46: 276 (type species *Crepidodera robusta* LeConte, 1874: North America, by monotypy) – Konstantinov, 1995, Coleopt. Bull. 49 (1): 73 (synonymized).

Crepidodera: Heikertinger, 1924, Wien. Kol. Rundsch. 9: 42 – Mohr, 1966, Fam. Chrysomelidae, in Die Kaefer Mitteleuropas, Bd. 9: 239–244.

Diagnosis. Body oval, small to medium-sized, yellowish to reddish brown or black without metallic luster and glabrous above. Head with frontal tubercles broad oval to triangular, vaguely or well delimited behind by a transverse groove. Antennae filiform

and 11-segmented. Pronotum subquadrate with an ante-basal transverse impression, delimited laterally by a short longitudinal furrow. Procoxal cavity closed behind; mid and hind tibiae normal, not excavated near the apex. Elytra with 11 rows of punctate-striae, sometimes these striae irregular on account of dense punctuation on interstices.

Male with the last abdominal sternite weakly tri-lobed and first tarsal segment of fore legs, at least, strongly dilated.

Though Konstantinov (1995) synonymized *Asiolestia* with *Neocrepidodera* after a comprehensive morphological study, these 2 groups may be distinguished as follows.

Frontal tubercles are well delimited behind by a transverse groove, and male aedeagus has the ventral side simple in *N. sibirica* group corresponding to *Neocrepidodera* (auct.). While the frontal tubercles are vaguely delimited behind without such groove, and male aedeagus has distinct converging ridges on apical half in the group corresponding to *Asiolestia* (auct.).

Biology. Adults are external feeders of herbaceous plants, such as Compositae, Labiatae, Rosaceae and Gramineae. *Asiolestia ferruginea* (Scopoli) is a pest of gramineous crops in Europe and Siberia. Its larvae bore into young stalks of Gramineae, and pupate in the soil when fully matured. Larvae were briefly described by Medvedev and Zaitsev (1978).

KEY TO JAPANESE SPECIES OF THE GENUS *NEOCREPIDODERA*

1. Frontal tubercles not distinctly delimited behind as from forward 2
 - Frontal tubercles subtriangular with tips inserted between eyes, distinctly delimited behind as from forward 10
2. Elytral humerus well developed, with hind wings 3
 - Elytral humerus undeveloped, with vestigial hind wings; body short oval, strongly convex dorsally; lustrous reddish brown to blackish; aedeagus as in Fig. 1 *komatsui* (Nakane)
3. Elytra regularly punctate-striate in 11 rows, the punctures generally weak and obscure posteriorly 6
 - Elytral punctures more or less confused with tendency to arrange in longitudinal rows, the punctures weak or fairly strong 4
4. Elytra somewhat rough with larger but obscure punctures in irregular rows; more or less confused near suture, with additional interstitial punctures; aedeagus as in Fig. 2 *interpunctata* (Motschulsky)
 - Elytra with fine punctures, arranged in irregular double rows; interstices smooth and shining 5
5. Color lustrous blackish; pronotum subparallel on basal half, slightly widened from base to middle, thence roundly narrowed to apex; anterior angle truncate and distinctly thickened; aedeagus as in Fig. 3 *satoi* n. sp.
 - Color reddish brown, with femora generally darkened; pronotum arcuate on lateral margins, widest at middle; anterior angle obscure; aedeagus as in Fig. 4 *obscuritarsis* (Motschulsky)
6. Pronotum densely covered with distinct, small punctures medially; elytra with punctate-striae distinct on basal 2/3, at least; aedeagus as in Fig. 5 *sublaevis* (Motschulsky)
 - Pronotum almost impunctate, or with very fine punctures 7
7. Body much convex dorsally; elytra highest at middle in lateral view, and thence suddenly lowered to apex, widest at middle and thence roundly narrowed to apex; aedeagus as in Fig. 6 .. *laevicollis* (Baly)
 - Body rather flat; elytra highest at slightly before middle and thence gently lowered to apex, widest at basal 1/3 to 1/2, somewhat produced posteriorly at apex. 8
8. Antennae dark brown on 7 apical segments, reddish brown on first 4 segments; pronotum

- distinctly punctate along basal transverse impression; male with the first tarsal segment distinctly dilated in all the legs; aedeagus as in Fig. 7 *ohkawai* n. sp.
- Antennae uniformly reddish brown; pronotum impunctate or weakly punctate along basal transverse impression; male with first tarsal segment of hind legs weakly dilated, much narrower than those of fore and middle legs. 9
 - 9. Body smaller, 2.5–3.5 mm in length; yellowish brown to reddish brown; pronotum rather evenly rounded on lateral margins; aedeagus as in Fig. 8 *acuminata* (Jacoby)
 - Body larger, 3.2–4.2 mm in length; lustrous reddish brown; pronotum arcuately diverged from base to apical 1/3; aedeagus as in Fig. 10 *gruevi* (Kimoto)
 - 10. Elytra with 11 regular rows of large punctures; humerus undeveloped without hind wings; pronotum convex, roundly divergent from the anterior angle to the base; disc densely covered with small punctures; aedeagus as in Fig. 9 *Neocrepidodera* sp.
 - Elytra with 11 rows of finer punctures; humerus developed, with hind wings; pronotum subquadrate, almost parallel on lateral margins; disc almost impunctate. 11
 - 11. Antenna with the first segment long and robust, almost as long as the 2nd and 3rd combined together; pronotum roundly and weakly narrowed to the base; disc densely covered with fine punctures; male with the first tarsal segment of fore legs only slightly dilated; aedeagus as in Fig. 11 *sibirica* (Pic)
 - Antenna with the first segment distinctly shorter than the 2nd and 3rd combined together; pronotum subquadrate, almost parallel on lateral margins; disc almost impunctate; male with the first tarsal segment of fore legs, at least, strongly dilated into oval shape; size slightly smaller. 12
 - 12. Frontal tubercles transverse and small; pronotum minutely punctate, with shallow transverse impression. *takara* (Nakane)
 - Frontal tubercles longitudinally oval; pronotum impunctate with deep transverse impression; aedeagus as in Fig. 12 *recticollis* (Baly)

Neocrepidodera acuminata (Jacoby, 1885) (Fig. 14)

Crepidodera acuminata Jacoby, 1885, Proc. Zool. Soc. London 1885: 722 (Japan: Nikko).

Asiolestia laevicollis (part): Kimoto, 1964, J. Fac. Agr., Kyushu Univ. 13(3): 424 –Kimoto, 1994, Leaf-beetles (Chrysomelidae) of Japan, Vol. Adult: 166, 247.

Distribution. Japan (Honsyu, Kyusyu).

Host. Unknown, possibly Gramineae.

Diagnosis. Body small, 2.5–3.5 mm in length, rather flat; yellowish brown to reddish brown. Pronotum impunctate on disc, rounded on lateral margins, sometimes rather diverged from base to basal 1/3. Elytra regularly but weakly punctate-striate on basal 2/3. Male with first tarsal segment of fore leg distinctly dilated and with the hind leg not dilated; aedeagus as in Fig. 8.

Kimoto (1965) synonymized *acuminata* with *laevicollis* as he thought the former was based on a male specimen of the latter. According to my study on the type specimens of both species, however, these two species are clearly different as shown in the key, that is *acuminata* has the body flat dorso-ventrally and aedeagus differently shaped as in Figs. 6 and 8. Further this species lives in lowland, whereas *laevicollis* are more or less in low mountains.

Biological note. This species is widely distributed in lowland in Honsyu and Kyusyu. Adults were found nearby paddy rice fields and grassland from late May, and associated with gramineous plants in Kanto District. My record on its phenology (1994)

was erroneously given as *Asiolestia laevicollis*.

Specimens examined. Honsyu – Iwate: 1 ex., Kantiyama-kogen, Onahama, 3.VIII.1991, S. Ohmomo (YK). Miyagi: 2 exs., Sitigasyuku, Siroisi, 29.IX–2.X.1998, H. Takizawa. Totigi: 1 ex., Kinugawa, Sioya, 27.IV.1997, K. Sato (TPM); 17 exs. Nanma, Kanuma, 25.VI, 23.VIII.1992, 28.VIII, 1, 25.IX.1993, 18.VI, 3, 20.VII, 18.IX.1994, H. Takizawa; 1 ex., Motegi, 22.V.1994, H. Takizawa; 1 ex., Yamizo-san, 2.VIII.1995, M. Inaizumi; 66 exs. Watarase-Yusui, Huzioka, 4.VII.1993, 14.IX.1997, H. Ohkawa; 2 exs., ditto, 19.V.1991, 29.IV.1992, K. Kusano. Ibaraki: 4 exs., Kasama, 17.VI.1984, Y. Komiya (YK); 1 ex., Yasutuka, Tutiura, 12.VII.1986, S. Ohmomo (YK); 4 exs., Aso T., 13–15.VI.2000, H. Takizawa; 20 exs., Kitauro V., 19–20.IX.2000, H. Takizawa. Kanagawa: 2 exs., Enkaisen, Yokohama, 19.VIII.1990, H. Takizawa; 2 exs., Zusi, 28.V.1989, H. Takizawa; 6 exs., Sitikoku-toge, Hiratuka, 18.V.1991, H. Takizawa; 66 exs., Ogino, Atugi, 26.V, 24.VI, 13.VII, 2, 23.IX.1990, 7, 21.VII, 17.VIII, 1, 15, 27.IX, 5, 17, 26.X.1991, 31.V, 14.VI.1992, H. Takizawa. Yamanashi: 4 exs., Nirasaki, 24.VII.1967, K. Kurosa. Kyoto: 2 exs., Kibune, 27.VII.1981, M. Miyazaki (NIAES). Tottori: 2 exs., Hinogawa, Tateiwa, Kisimoto-tyo, 24.VII.1997, Y. Koshiyama; 1 ex., Hinogawa, Kuzumo, Yonago, 25.VII.1997, Y. Koshiyama; 1 ex., Hossyozigawa, Sakae, Saihaku-tyo, 19.IX.1997, Y. Koshiyama; 2 exs., Sendaigawa, Motigase-tyo, 30.VIII.1993, K. Nojima. Kyusyu – Miyazaki: 1 ex., Toguti, Miike-tyo, Miyakonozyo-si, 28.V–1.VI.1990, A. Nishiyama & M. Tao (YK).

Neocrepidodera gruevi (Kimoto, 1983) (Fig. 20)

Asiolestia sublaevis: Kimoto, 1965, J. Fac. Agr. Kyushu Univ. 13(2): 42 (Japan).

Asiolestia gruevi Kimoto, 1983, Ent. Rev. Japan, 38(1): 49 (Japan: Nikko, Hakusan, Ozegahara, Tokugo-toge, Kamikochi, Shirahone) – Kimoto, 1994, Leaf-beetles (Chrysomelidae) of Japan, Vol. Adult: 166, 247.

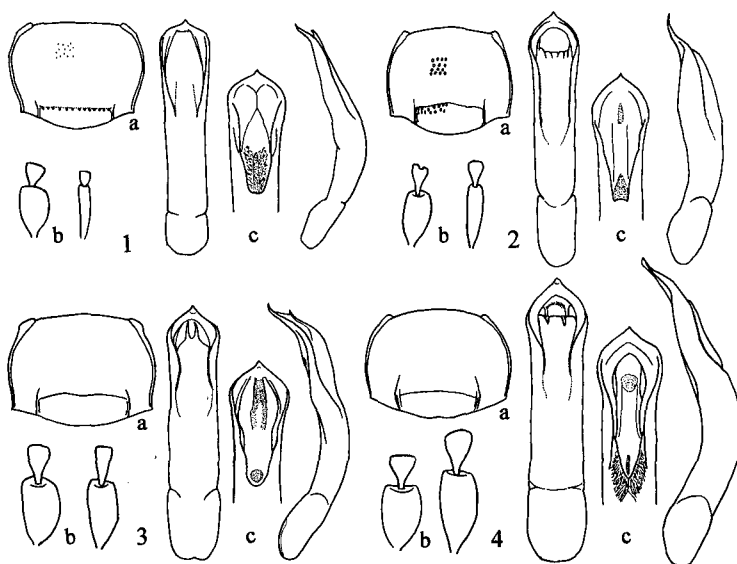
Distribution. Japan (Honsyu, Kyusyu).

Host. Unknown.

Diagnosis. Body rather flat and small, 3.2–4.2 mm in length; lustrous reddish brown; pronotum arcuately diverged from base to apical 1/3, with fine punctures on the disk; basal transverse impression distinct and straight; elytra distinctly punctate-striate on basal 1/3. Male with first tarsal segment of hind legs weakly dilated; aedeagus as in Fig. 10.

Biological note. This species is found in rather mountaneous area on various herbs, such as *Cirsium* etc.

Specimens from the following localities were examined. Honsyu – Akita: Mt. Tyokai. Iwate: Mt. Hayatine. Hukusima: Mt. Iide-san, Mt. Muzinagamori in Oonuma-gun and Kassi-onsen. Totigi: Sandogoya in Nasu, Nikko, Mt. Sirane and Mt. Taro in Nikko, Mt. Sukai-san. Gunma: Huzimi-toge and Hatomati-toge in Oze, Kawaba and Minakami. Niigata: Mt. Naebayama and Mt. Sumon-dake. Yamanashi: Mt. Daibosatu, Mt. Senzyo. Nagano: Mt. Naro in Suzaka, Uminokuti, Kamikoti, Tokugo-toge, Mt. Amakazari and Togakusi. Sizuoka: Mt. Tyausu-dake in Akaisi Mts. Isikawa: Mt. Hakusan. Nara: Mt. Misen in Mts. Oomine. Siga: Etigawa in Aito-tyo. Okayama: Oogaya in Nishiawakura V., and Neti in Kamo-tyo. Tottori: Kami-hosomi in Kisimoto-tyo and Sakae in Saihaku-tyo. Kyusyu – Bungo.



Figs. 1–4, a: pronotum, b: basal two tarsal segments (left: fore leg, middle: middle leg, right: hind leg), c: aedeagus (left: dorsal view, middle: ventral view, right: lateral view) of: 1, *N. komatsui* (from Tokugo-toge, Nagano); 2, *N. interpunctata* (from Tesio-gun, Hokkaido); 3, *N. satoi*, n. sp. (from Syozin-zawa, Totigi); 4, *N. obscuritarsis* (from Tesio, Hokkaido).

Neocrepidodera interpunctata (Motschulsky, 1859) (Fig. 21)

Crepidodera interpunctata Motschulsky, 1859, Bull. Soc. Imp. Nat. Moscou 32(2): 498 (Amur).

Crepidodera mitsuhashii Matsumura, 1911, J. Coll. Agr., Tohoku Imp. Univ., Sapporo 4 (1): 143 (S. Sakhalin; Japan: Sapporo in Hokkaido) – Kimoto, 1965, J. Fac. Agr., Kyushu Univ. 13 (3): 423 (synonymized).

Asiolestia interpunctata: Kimoto, 1965, J. Fac. Agr., Kyushu Univ. 13 (3): 423; Kimoto, 1994, Leaf-beetles (Chrysomelidae) of Japan, Vol. Adult: 166, 247.

Distribution. Japan (Hokkaido), Kuriles, Sakhalin, Siberia, N. Europe.

Host. Unknown.

Diagnosis. Body rather flat and narrow, 3.0–4.2 mm in length; wholly yellowish brown; pronotum subquadrate, densely covered with distinct punctures; basal transverse sulci broad and obscure, and densely punctate along itself; elytra with distinct punctures arranged in irregular longitudinal rows; interstices also punctate and sometimes slightly rugose. Male with first tarsal segment of hind legs not dilated; aedeagus as in Fig. 2.

Biological note. Almost nothing is known about its biology, but adults are found on herbaceous plants in marshes and wet area from June to August.

Specimens from the following localities were examined. Hokkaido – Odaito in Bekkai-tyo, Sibetya (on raddish) and Asyoro-tyo in Kusiro; Meguma-numa in Wakkanai, Toyotomi, Sarobetu-genya, Tenpoku Agr. Stat., Horonobe and Risiri Is. in Soya; Kenebetu in Abasiri; Sapporo and Rankosi in Isikari.

Kuriles – Sikotan and Iturup

Sakhalin – 4 exs., Toninaitya, 22.VII. (syntypes of *Crepidodera mitsuhashii* Matsumura, 1911: SEHU); 1 ex., Sisuka, 18.VII.1938, H. Hasegawa (NIAES); Itinosawa, Otani, Otomari, Honto, Tomunai and Toyohara (Takizawa, 1972).

Siberia – 5 exs., Amur Gebiet, 10.VII.1974, Popov (HT).

Neocrepidodera komatsui (Nakane, 1963) (Fig. 22)

Asiolestia komatsui Nakane, 1963, *Fragm. Col.*, ed. Nakane 4–5: 20 (Japan: Kamikoti in Nagano Pref.) – Kimoto, 1994, *Leaf-beetles (Chrysomelidae) of Japan*, Vol. Adult: 166, 247.

Distribution. Japan (Honsyu).

Host. Unknown.

Diagnosis. Body rather strongly convex dorsally, and small, 2.8–3.5 mm in length; lustrous dark reddish brown or blackish; antennae and legs dark reddish brown, sometimes hind femur infuscate; pronotum arcuately diverged from base to apical 1/3; disk strongly convex, with fine punctures; basal transverse impression straight; humerus undeveloped; elytra with fine punctures in regular longitudinal rows. Male with first tarsal segment of hind legs not or slightly dilated; aedeagus as in Fig. 1.

Biological note. So far known, this species seems to be restricted to mountainous area. I examined a total of 11 specimens including the holotype. Of them six specimens from Kamikoti and Tokugo-toge in Nagano, and from Mt. Hakusan in Hukui are blackish, while 4 specimens from Mt. Tanigawa in Gunma are dark reddish brown. The latter form is also characterized in the male by the slightly dilated first tarsal segment on hind legs. These differences may indicate local differentiation in this apterous insect. But one specimen from Simasima-dani, near Tokugo-toge, Nagano is dark reddish brown.

Specimens examined. Honsyu - Gunma: 4 exs., Mt. Tanigawa, 23.VII.1961, T. Kawarabata (SK). Nagano: 2 exs., Tokugo-toge, 26.VII.1924, H. Yuasa (NIAES); 1 ex. (Holotype in SEHU), Kamikoti, 21.VI.1951, T. Nakane; 1 ex. (paratype in SEHU), Simasima-dani, 15.VII.1956, T. Nakane. Hukui: 2 exs., Nakahanba, Mt. Haku, 22.VII.1961, S. Takaba (SK); 1 ex., Koike, Mt. Haku, 22.VII.1969, H. Sasaji (SK).

Neocrepidodera laevicollis (Jacoby, 1885) (Fig. 15)

Crepidodera laevicollis Jacoby, 1885, *Proc. Zool. Soc. London* 1885: 722 (Japan: Oiwake).

Asiolestia laevicollis: Kimoto, 1964, *J. Fac. Agr., Kyushu Univ.* 13(3): 424 – Kimoto, 1994, *Leaf-beetles (Chrysomelidae) of Japan*, Vol. Adult: 166, 247.

Distribution. Japan (Honsyu, Sikoku, Kyusyu), S. China.

Host. Unknown.

Diagnosis. Body rather convex dorsally, small 2.8–3.5 mm in length; lustrous dark reddish brown to blackish; antennae and legs slightly lighter in color; pronotum rounded on lateral margin or slightly diverged from base to apical 1/3; disc impunctate, with distinct punctures along basal transverse impression; basal longitudinal furrow short; elytra with irregular fine punctate-striae, which are partially composed of two rows. Male with 1st tarsal segment of fore legs weakly dilated; aedeagus as in Fig. 6.

Biological note. This species is found at low mountains on undergrowth in the forest and also along roadside from July to September.

Specimens from the following localities were examined, including the holotype of *Crepidodera laevicollis* Jacoby (Japan. 1910-320, G. Lewis; BMNH, London).

Honsyu – Tokyo: Mt. Zinba-san and Mt. Takao. Kanagawa: Mt. Myozin-dake, Mt. Komagatake and Mt. Soun-zan in Hakone. Totigi: Mt. Tyausu in Nasu and Koyasumido in Imaiti. Gunma: Mt. Haruna, Mt. Mikabo and Kirizumi Onsen. Kyoto: Kibune. Kyusyu – Oita: Mt. Kurodake in Kuzyu and Oike in Syonai

Neocrepidodera obscuritarsis (Motschulsky) (Fig. 23)

Crepidodera obscuritarsis Motschulsky, 1859, Bull. Soc. Imp. Nat. Moscou 32(2): 498 (Amur).

Crepidodera lewisi Jacoby, 1885, Proc. Zool. Soc. London 1885: 721 (Japan).

Distribution. Japan (Hokkaido, Honsyu, Sikoku, Kyusyu), NE. China, E. Siberia, Sakhalin.

Host. *Plantago* spp. and *Persicaria thunbergii*.

Diagnosis. Body medium-sized, 4.5–6.0 mm in length; lustrous reddish brown, sometimes with yellowish tinge; antennae on 5th to 11th segments, both middle and hind femura and tibiae on apical half and tarsi dark brown to blackish. Pronotum almost impunctate, arcuate on lateral margins; elytra with fine punctures arranged in irregular double rows. Male with all the first tarsal segments strongly dilated; aedeagus as in Fig. 4.

Biological note. This species distributes from lowland to mountaneous area upto ca. 2,000 m. Adults are found feeding on *Persicaria thunbergii* and allied species in rather wet side, and also found on *Plantago* spp. along roadside from June to October.

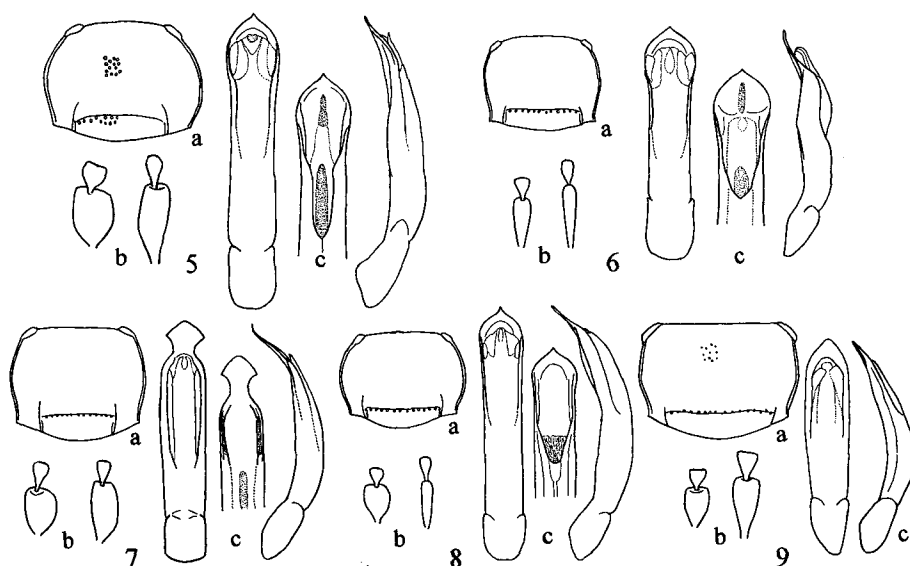
Specimens from the following localities were examined, besides the holotype of *Crepidodera lewisi* Jacoby (Japan, 1910-320, G. Lewis; BMNH, London).

Hokkaido – Toyotomi and Horonobe in Soya; Abasiri-si in Abasiri; Akan, Sibetya and Gamusi in Kusiro; Aizankei: Mt. Taisetu, in Kamikawa; Uryu-numa: Mt. Syokanbetu, in Sorati; Obihiro, Kamisihoro, Memuro, Ikeda, Akan and Sintoku in Tokati; Niikappu and Sizunai in Hidaka; Mt. Yubari, Sapporo, Zyozankei, Mt. Muine, Mt. Soranuma, Nopporo and Kariki in Isikari; Sikotu-ko, Mt. Tarumae and Noboribetu in Iburi; Hukusima and Hakodate in Osima. Honsyu – Aomori: Osore-san. Iwate: Matuo, Ogasawara and Oosawa-onsen. Hukusima: Nakura in Hanawa-mati and Tateiwa-mura. Totigi: Kotoku, Yumoto, Senzyogahara, Mt. Nantai-san and Nikko in Nikko; Mt. Nasu-dake; Hikage and Yokokawa in Hujihara; Oku-kinu and Yunisikawa in Kuriyama; Keityo-kaitaku; Omoigawa, Karaburogawa in Asio; Kaminagano in Awano, Kaminanma in Kanuma and Omoigawa in Tuga. Saitama: Kawamata. Tokyo: Unazawa and Taba in Okutama and Tokyo. Kanagawa: Mt. Soun-zan and Myozin-dake in Hakone. Gunma: Kirizumi-onsen, Mt. Haruna-san and Karuizawa. Sizuoka: Doi. Yamanashi: Mt. Kasatori, Mt. Daibosatu, Dentuku-toge and Huzi 5 gome. Nagano: Mt. Moriya-san, Simosuwa, Sirakaba-ko, Mt. Siomi, Mitake-kogen, Noziri-ko, Sirahone and Suzuran in Mt. Norikura, and Kamikoti. Kyoto: Mt. Kibune and Mt. Daihizan. Kyusyu – Oita: Mt. Kurodake in Kuzyu.

Sakhalin – 1 ex., Konuma, 27.VII.1934, C. Watanabe & T. Inoue (SEHU).

Russia – 10 exs., Brovnichi, Primorsky, 28.VII.1993, on *Artemisia* sp., A. Abe (HT)

China – 3 exs., O-sho-den in NE. China, 8.VIII.1940, S. Matsumura (SEHU); 1 ex., Feng-tien in NE. China, 15.VIII.1940, S. Matsumura (SEHU).



Figs. 5–9, a: pronotum, b: basal two tarsal segments (left: fore leg, middle: middle leg, right: hind leg), c: aedeagus (left: dorsal view, middle: ventral view, right: lateral view) of: 5, *N. sublaevis* (from Rikubetu, Hokkaido); 6, *N. laevicollis* (from Mt. Tyausu, Totigi); 7, *N. ohkawai*, n. sp. (from Omoigawa, Totigi); 8, *N. acuminata* (from Watarase, Totigi); 9, *Neocrepidodera* sp. (from Bodai, Kanagawa).

Neocrepidodera ohkawai, n. sp. (Fig. 16)

Diagnosis. Body smaller, 3.0–4.2 mm in length, rather flat; light reddish brown. Pronotum weakly diverged from base to middle; disc densely covered with fine punctures. Elytra regularly punctate-striate on basal 2/3. Male with first tarsal segment of hind legs strongly dilated; aedeagus strongly produced and widely dilated at apex.

Male. Body long oval and rather flat, small, 3.0–3.8 mm in length, 1.8–2.0 mm in width, widest anteriorly to middle of elytra; light reddish brown with labrum and antennae on 7 apical segments dark brown. Head smooth; frontal tubercles widely fused, distinctly delimited on anterior margin only; antennae rather robust, about 3/5 as long as body; relative length of each segment as: 11th > 1st > 5th > 9th = 10th > 3rd = 4th = 6th = 7th > 8th >> 2nd; 11th longest and pointed, about 2.7 times as long as 2nd, and about 1.2 times as long as 1st. Pronotum 1.2 times as wide as long, roundly widened from base to beyond middle, thence roundly narrowed to anterior angles; almost straight at anterior margin, sinuately produced at posterior margin; anterior angle roundly thickened; the posterior almost rectangular and sharp; basal transverse impression almost straight; longitudinal sulci deeply impressed; disc weakly convex, densely covered with fine punctures. Scutellum ovate and smooth. Elytra distinctly wider than pronotum; elytra with 11 regular rows of distinct punctures; punctate-striae becoming obscure on apical 1/4; interstices smooth and shining; humerus weakly developed, interiorly to which 6th punctate-striae depressed longitudinally. First tarsal segment strongly dilated on all legs. Aedeagus produced into a broad triangular lobe at apex as in Fig. 7.

Female slightly larger, 3.8–4.2 mm in length, 2.0–2.1 mm in width; first tarsal

segment not dilated.

Distribution. Japan (Honsyu).

Host. Unknown.

Remarks. This species looks like *N. acuminata*, but is robuster with elytral punctures much stronger, with pronotum densely punctured along basal impression. In the male, hind legs with first tarsal segment distinctly dilated, and aedeagus produced into a triangular lobe apically. This species is named after Mr. H. Ohkawa, who collected first this interesting species in Totigi Prefecture. This species was found on sandy places in a river bed. At Riv. Omoigawa where a lot of specimens were collected, this species was associated with a small stand of short *Carex* sp. Unfortunately with the heavy rains in the Autumn of 1997, this stand was completely eloded and the species was disappeared.

Specimens examined. Holotype (male), Riv. Omoigawa, Tuga, Totigi, 29.VI.1997, H. Ohkawa leg. (SEHU, Sapporo). Paratypes: Honsyu – Totigi: 1 ex., Riv. Watarasegawa, Asikaga, 2.VIII.1992, H. Ohkawa; 10 exs., Riv. Omoigawa, Tuga, 22.VI.1997, H. Ohkawa; 33 exs., ditto, 26.VI.1997, K. Sato; 9 exs., ditto, 29.VI.1997, K. Sato (TPM).

Neocrepidodera recticollis (Jacoby, 1885) (Figs. 17 & 24)

Crepidodera recticollis Jacoby, 1885, Proc. Zool. Soc. London 1885: 721 (Japan: Kashiwagi).

Neocrepidodera recticollis: Kimoto, 1994, Leaf-beetles (Chrysomelidae) of Japan, Vol. Adult: 169 (Honsyu, Sikoku, Kyusyu).

Distribution. Japan (Honsyu, Sikoku, Kyusyu).

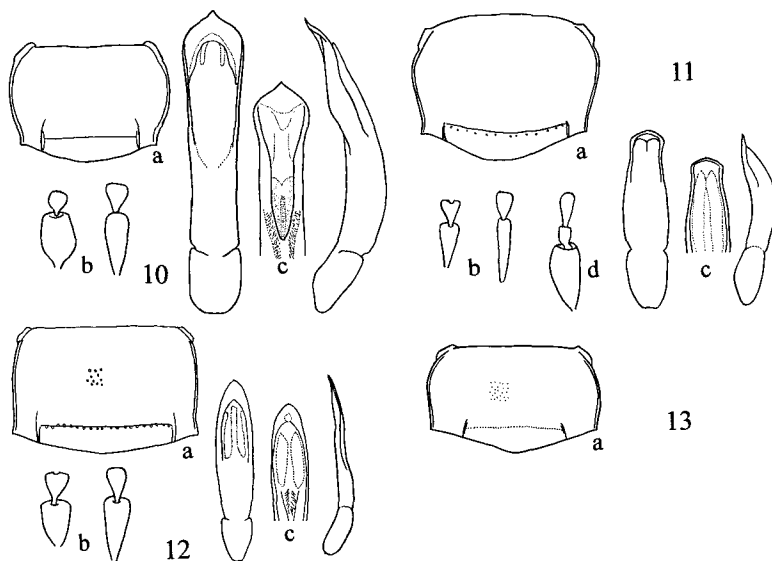
Host. *Lyshimachia clethroides*.

Diagnosis. Body small, 1.9–2.5 mm in length, dorsally convex and widest at basal 1/3 of elytra; wholly light brownish. Head with frontal tubercles distinctly delimited behind by a sulcus. Pronotum almost subquadrate; disc very finely punctate; basal transverse impression distinct. Elytra finely and regularly punctate on basal 2/3. Male with first tarsal segment strongly dilated on all the legs; aedeagus as in Fig. 12.

Populations from Northern part of Honsyu Is., from Iwate to Totigi Pref. and Nagano Pref., are characterized by the robuster body, the distinctly punctate vertex and by rather triangular frontal tubercles, compared with those from Kyusyu to Kanagawa Pref. Interestingly both the types are occurring in Totigi Prefecture. I treat these populations as *recticollis*, tentatively. The holotype belongs to the smaller, southern type.

Biological note. This species was found from lowland to mountains of 1,000 – 1,500 m, feeding on leaves of *Lyshimachia clethroides* along sunny roadside and fields from May to September.

Specimens examined. Honsyu – Iwate: 1 ex., Hatimantai, Matuo, 29.VII.1999, M. Horikawa; 1 ex., Sumita V., 3-5.VII.2000, H. Takizawa. Miyagi: 2 exs., Sitigasyuku, Siroisi, 30.VII-1.VIII.1998, H. Takizawa. Totigi: 3 exs., Kohukabori, Nasu, 18.VI.1995, 24.VII, 14.VIII.1993, H. Takizawa; 1 ex., Yokokawa, Huzihara, 21.VII.1997, H. Takizawa; 4 exs., Hikage, Huzihara, 21.VII.1997, H. Takizawa; 1 ex., Siobara, 27.VII.1997, H. Takizawa; 2 exs., Mitosizawa, Huzihara, 21.VII.1997, H. Takizawa; 1 ex., Kobugahara, Kanuma, 7.VIII.1983, H. Takizawa; 7 exs., Nanma, Kanuma, 29.VII.1993, 19.VI, 20.VII, 6.VIII.1994, H. Takizawa; 4 exs., Zyomin Yukari, Nasu, 15.VI.1997, 25.VIII.1996, H. Takizawa. Tokyo: 1 ex., Mt. Takao, 13.IX.1965, H. Takizawa. Gunma: 2 exs., Mt. Haruna, 5.VIII.1989, H. Takizawa. Nagano:



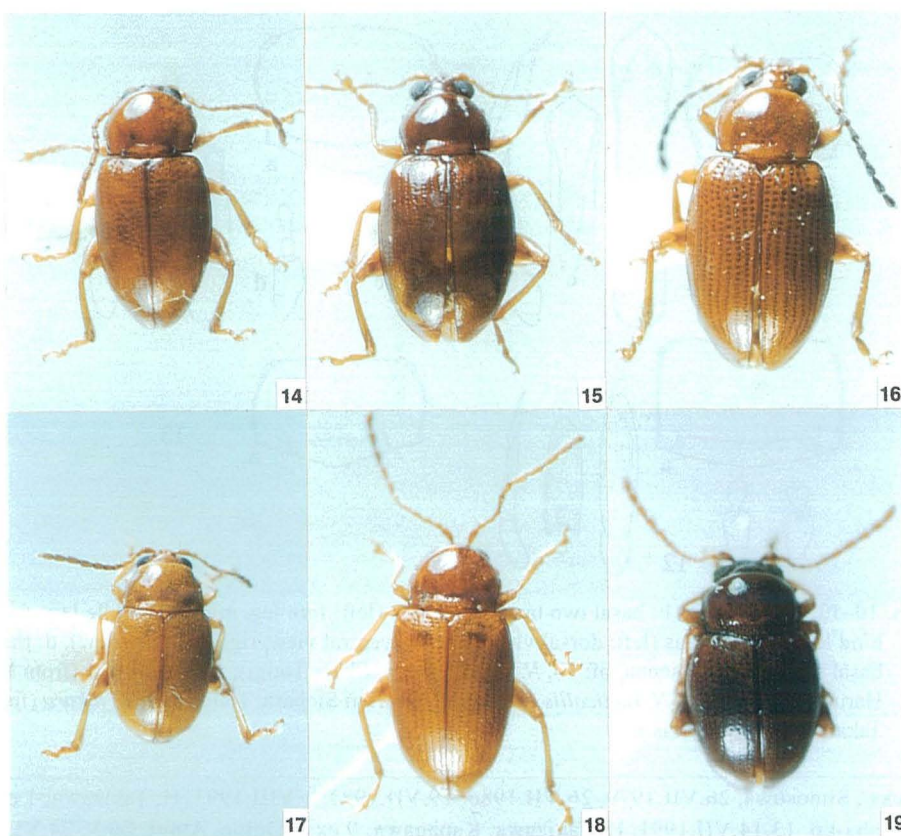
Figs. 10–13, a: pronotum, b: basal two tarsal segments (left: fore leg, middle: middle leg, right: hind leg), c: aedeagus (left: dorsal view, middle: ventral view, right: lateral view), d: three basal segments of antenna, of: 10, *N. gruevi* (from Nikko, Totigi); 11, *N. sibirica* (from Mt. Haruna, Gunma); 12, *N. recticollis* (northern type from Siobara, Totigi); 13, *N. takara* (from Takara-zima, Ryukyu Is.).

11 exs., Simosuwu, 26.VII.1979, 26.VII.1986, 29.VII.1982, 1.VIII.1993, H. Takizawa; 1 ex., Sirakaba-ko, 13,14.VII.1991, H. Takizawa. Kanagawa: 9 exs., Ogino, Atugi, 26.V, 24.VI, 2, 27.IX.1990, H. Takizawa. Siga: 1 ex., Mt. Ibukiyama, 10.VI.1990, H. Takizawa. Kyusyu – Oita: 27 exs., Kobukuro, Nakatu, 4.VII.1992, H. Takizawa. Hukuoka: 1 ex., Mt. Hiraodai, 6.VII.1989, H. Takizawa.

Neocrepidodera satoi, n. sp. (Fig. 25)

Diagnosis. Body medium-sized, 4.0–5.2 mm in length; lustrous black; antennae dark brown with first 4 segments light brown; tarsi brownish. Pronotum subparallel-sided on basal half; basal transverse impression sinuate, running near anterior end of longitudinal sulci; disc with minute punctures. Elytra with fine punctures arranged in irregular double rows. Male with first tarsal segment of hind legs rather slender.

Male. Body long oval and widest at middle of elytra, medium-sized, 4.0–5.0 mm in length, 2.0–2.2 mm in width; lustrous black, with antennae on 4 basal segments and tarsi apically brown. Head smooth and shining; frontal tubercles widely fused, well delimited at anterior margin only; antennae slender and filiform, about half as long as body; relative length of each segment as: 11th > 5th = 9th > 1st > 3rd = 10th > 4th = 6th = 7th = 8th >> 2nd; 11th longest and pointed, 3 times as long as 2nd, and 1.3 times as long as 5th. Pronotum subquadrate, 5/6 times as long as wide, weakly rounded on lateral margins, widest behind apical 1/3, thence almost straightly narrowed to base; almost straight at anterior margin, and arcuately produced at posterior margin; anterior angle obtusely and bluntly thickened, the posterior almost rectangular and sharp; disc fairly



Figs. 14–19, habitus of: 14, *N. acuminata* (from Watarase, Totigi); 15, *N. laevicollis* (from Mt. Tyausu, Totigi); 16, *N. ohkawai*, n. sp. (from Omoigawa, Totigi); 17, *N. reticulata* (southern type from Mitosizawa, Totigi); 18, *N. sibirica* (from Kasama, Ibaraki); 19, *Neocrepidodera* sp. (from Bodai, Kanagawa).

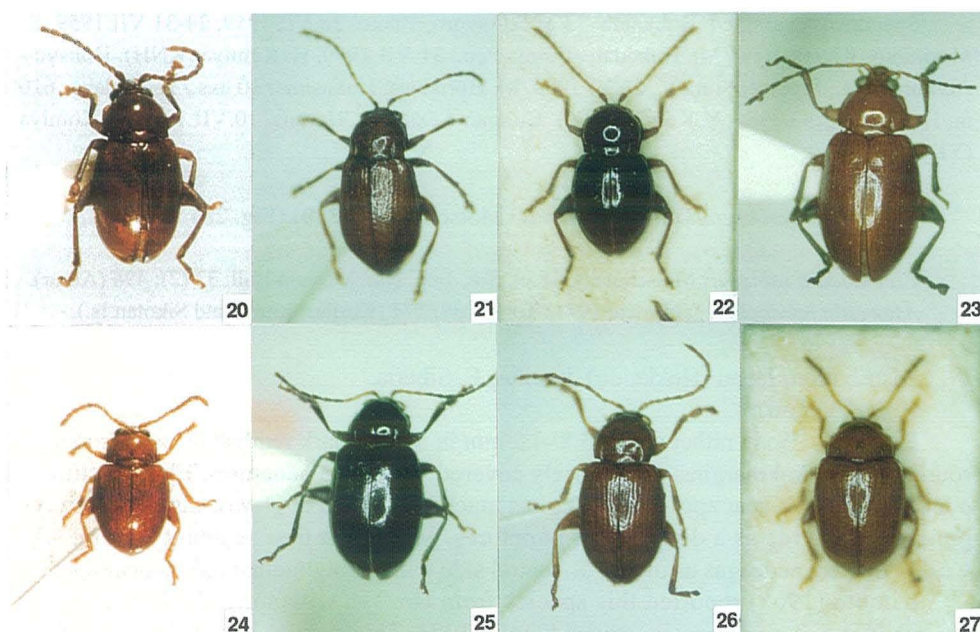
convex and densely covered with minute punctures; basal transverse impression sinuate with lateral longitudinal sulci deeply impressed. Scutellum ovate and smooth. Elytra wider than prothorax at base, $5/7$ times as wide as long; disc with fine punctures arranged in more or less irregular double rows, which become obscure on apical $1/3$; apex slightly produced and truncate. First tarsal segment of fore and middle legs broadly oval, as wide as 3rd segment, on hind legs weakly dilated and narrower than the 3rd. Aedeagus smooth behind ventral ridges as shown in Fig. 3.

Female slightly larger with first tarsal segments of legs not dilated.

Distribution. Japan (Honsyu)

Remarks. This species is similar to *N. obscuritarsis* on account of similar body shape, elytra with double rows of fine punctures, and shape of male aedeagus. The coloration and shape of the pronotum are quite distinctive to separate these two species. This species is named after Mr. K. Sato, who collected this species and found its hosts at Totigi Prefecture. This species was found feeding on leaves of *Hydrangea involutata* growing along a path in a closed forest. Adults appear in June and are found till October.

Host. *Hydrangea involutata*.



Figs. 20–27, habitus of: 20, *N. gruevi* (from Nisi-awakura, Okayama); 21, *N. interpunctata* (from Asyoro, Hokkaido); 22, *N. komatsui* (Holotype); 23, *N. obscuritarsis* (from Hakone, Kanagawa); 24, *N. recticollis* (northern type from Siobara, Totigi); 25, *N. satoi*, n. sp. (from Syozin-zawa, Totigi); 26, *N. sublaevis* (from Rikubetu, Hokkaido); 27, *N. takara* (Holotype).

Specimens examined. Holotype (male), Syozin-zawa, Sioya, Totigi, 1.VII.1997. K. Sato leg. (SEHU, Sapporo). Paratypes. Honsyu – Totigi: 1 ex., Kamimiyori, 28.VI.1983, M. Inaizumi; 92 exs., Syozin-zawa, Sioya, 1.VII.1997, K. Sato (TPM); 9 exs., ditto, 15.VI.1998, H. Takizawa; 32 exs., ditto, 26, 27.VI, 9.VII.1998, K. Sato (TPM); 3 exs., Toba-Sinden, Sioya, 8.VI.1998, K. Sato (TPM); 1 ex., Hikoma, Kurosawa, Tanuma, 11.VII.1997, H. Ohkawa (TPM). Saitama: 1 ex., Kuroyama sandaki, 6.VII.1985, Y. Komiya (YK). Paratypes are preserved in SEHU, TPM, BMNH in London, and in author's private collection.

Neocrepidodera sibirica (Pic, 1909) (Fig. 18)

Ochrosis sibirica Pic, 1909, L'Echange 25: 155 (Siberia).

Neocrepidodera sibirica: Kimoto, 1994, Leaf-beetles (Chrysomelidae) of Japan, Vol. Adult: 169 (Japan, Hokkaido; Siberia)

Distribution. Japan (Hokkaido, Honsyu), Siberia.

Host. *Lyshimachia clethroides*.

Diagnosis. Body rather flat and small, 2.8–3.2 mm in length; yellowish brown to brown; antenna robust especially in male, with the first segment almost as long as 2nd and 3rd combined together; pronotum weakly arcuate on lateral margins; disc densely punctate; elytra weakly punctate-striate, the striae somewhat irregular; interstices covered with minute punctures. Male with the first tarsal segment slightly dilated; aedeagus as in Fig. 11

Specimens examined. Hokkaido – 3 exs., Asyoro, Tokati, 26.VII.1959, 24-31.VII.1959, K. Morimoto (KNH); 1 ex., Mt. Hakodate, Osima Pen., 31.VII.1959, H. Kamiya (KNH). Honsyu - Aomori: 1 ex., Sotome, Siura V., 23.VI.1999, M. Horikawa. Hokusima: 10 exs., Yosikidaira, 610 m, Iwaki-si, 15.VI.1985, Y. Komiya (YK). Gunma: 4 exs., Mt. Haruna, 10.VII.1963, Y. Komiya (YK).

Neocrepidodera sublaevis (Motschulsky, 1859) (Fig. 26)

Crepidodera sublaevis Motschulsky, 1859, Soc. Imp. Nat. Moscou Bull. 32 (2): 498 (Amur).
Asiolestia laevicollis: Takizawa, 1971, Kontyu 39: 177 (Kuriles: Iturup and Sikotan Is.).

Distribution. Japan (Hokkaido), Kuriles, E. Siberia.

Host. Unknown.

Diagnosis. Body rather small, 3.8–4.2 mm in length; dark reddish brown. Pronotum rounded on lateral margins; disc densely covered with large punctures. Elytra distinctly punctate-striate to near apex; the punctures much larger than in *gruevi*, distance between punctures as wide as a diameter of punctures. Male with first segment of hind legs weakly dilated; aedeagus as in Fig. 5, ventral side with a longitudinal sulcus near apex.

Kimoto (1965) reported this species from Honsyu with some doubts, and later described it as a new species, *gruevi* Kimoto, 1983. This species is here recorded from Japan with certainty, though Heikertinger (1948) vaguely stated its occurrence in Japan.

Specimens examined. Hokkaido – 2 exs., Rikubetu T., 30.VIII.1966, Y. Komiya (YK); 2 exs., Hurano Exp. Forest, 680 m, 43° 13' N & 142° 20' E, 9–10.VIII.1996, L. Mauser (CNC).

Neocrepidodera takara Nakane, 1963 (Fig. 27)

Neocrepidodera takara Nakane, 1963, Fragm. Col., ed. T. Nakane, 4–5: 20 (Tokara: Takara-zima) – Kimoto, 1994, Leaf-beetles (Chrysomelidae) of Japan, Vol. Adult: 169 (Ryukyu Is.: Takara-zima).

Distribution. Japan (Ryukyu Is.).

Host. Unknown.

Diagnosis. Body small, 2.0 mm in length; reddish brown; pronotum weakly punctate, and weakly rounded at lateral margins, with basal transverse impression weak and impunctate; elytra weakly punctate-striate, interstices covered with minute punctures.

Specimens examined. Holotype (female), Takara-zima, Tokara, 26.V.1953 (SEHU); no other specimens are available.

Neocrepidodera sp. (Fig. 19)

Distribution. Japan (Honsyu).

Host. Unknown.

Diagnosis. Body small, 1.9 mm in length, rather robust, and dark reddish brown; antennae and legs reddish brown. Pronotum convex, arcuately diverged from base to middle; basal transverse impression weak; anterior angle robust and obliquely truncate; disc densely covered with distinct small punctures. Elytra distinctly punctate-striate on

basal 2/3; humerus undeveloped. Male with 1st tarsal segment strongly dilated on all the legs.

This species is rather distinctive among the Japanese congeners on account of the undeveloped humerus. But I refrain from describing this as a new species, till I get more specimens.

Specimens examined. Honsyu – Kanagawa: 1 ex., Bodai, Hatano, 16.V.1971, H. Takizawa.

REFERENCES

- Doberl, M. 1994. Alticinae. In G. Lucht et al. (eds.), *Die Kaefer Mitteleuropas*, Bd. 14: 92–142. Goecke & Evers, Krefeld.
- Kimoto, S. 1965. The Chrysomelidae of Japan and the Ryukyus Islands VIII (Subfamily Alticinae I). *J. Fac. Agr. Kyushu Univ.* 13: 401–429.
- Kimoto, S. 1994. Leaf-beetles (Chrysomelidae) of Japan. Vol. Adult. Tokai Univ. Press, Tokyo.
- Konstantinov, A. S. and Vandenberg, N. J. 1996. Handbook of Palearctic flea beetles (Coleoptera: Chrysomelidae: Halticinae). *Contr. Entomol. Intern.* Vol. 1, Associated Publ., Gainesville.
- Medvedev, L. N. and Zaitsev, Y. M. 1978. Larvae of leaf-beetles of Sibereia and Far East. Nauka, Moscow (in Russian).
- Takizawa, H. 1994. Seasonal changes in leaf-beetle fauna of a warm temperate lowland in Japan. In P. Jolivet et al. (eds), *Novel Aspects of Chrysomelid Biology*, p. 511–525, Kluwar Academic Press, Dordrecht.